

REMARKS

Claims 1 and 3-17 are currently pending in the applications. Claims 2, 18, and 19 were previously canceled. Claim 1 has been amended, and Claim 3 has been canceled. Applicant respectfully requests reconsideration of the pending claims in view of the following remarks.

The Examiner rejected Claims 1, 3-8 and 12-17 under 35 U.S.C. § 102 as being anticipated by U.S. Patent Application Publication No. 2002/0186572 ("Nishida").

Nishida does not disclose the subject matter of amended independent Claim 1. More specifically, Nishida does not disclose a switched-mode power supply wherein the timing unit comprises a diode, which is arranged between the primary-side switch and an input terminal of the switched-mode power supply such that the charging current of the control capacitor can be limited during the turn-off time of the primary-side switch.

Rather, Nishida discloses a switching power supply 1 includes a transformer T having a primary winding N1, a secondary winding N2, and a feedback winding N3. The power supply 1 also includes a switch Q1 and a control circuit 4 for controlling the switch Q1. The control circuit 4 includes a plurality of components for determining when the switch Q1 turns on and off. The control circuit 4 does not include a single control capacitor that adjusts the turn-off time of the switch Q1 based on the charging current of that control capacitor. The control circuit 4 requires a much more complex arrangement of components to control the on and off time of the switch Q1. In addition, the diode D3 is not arranged such that the charging current of the capacitor C5 or C2 is limited during the turn-off time of the switch Q1.

In typical switch-mode power supplies, the main switch Q1 determines the amount of energy which is fed to the transformer, and this amount of energy in the transformer defines the oscillating frequency of the conventional ringing choke architecture. However, that arrangement is problematic in that the off-load power loss is considerably higher than is acceptable today. In addition, switch-mode power supplies including integrated circuits and a complex driver architecture on the primary-side are rather expensive and complicated.

By utilizing a diode in a feedback branch as specified in Claim 1, that inhibits the switching-on of the primary switch by inhibiting a reloading of the control capacitor has been discovered to solve the above deficiencies.

For example, diode D17 is positioned between switch T12 and input terminal K12 of the power supply in the present invention. The diode D17 inhibits the switching-on of

the switch T12 by inhibiting the reloading of the capacitor C14. Thus, the switch T12 is only turned on after the capacitor C14 is charged via the transistor T11 to a sufficient extent. The pause during which the switch T12 is turned off is controlled via the transistors T10 and T11.

For at least the reasons discussed above, Nishida does not disclose the subject matter of Claim 1. Accordingly, independent Claim 1 is allowable. Claims 4-17 depend from Claim 1, and, are therefore, allowable for at least the reasons Claim 1 is allowable.

The Examiner rejected Claims 9-11 under 35 U.S.C. § 103 as being unpatentable over Nishida in combination with U.S. Patent No. 4,208,705 ("Hosoya").

Claims 9-11 depend from Claim 1, and are therefore allowable for at least the reasons Claim 1 is allowable. As noted above, Nishida does not disclose the subject matter of amended Claim 1. Hosoya does not cure the deficiencies of Nishida. Hosoya does not disclose a switched-mode power supply wherein the timing unit comprises a diode, which is arranged between the primary-side switch and an input terminal of the switched-mode power supply such that the charging current of the control capacitor can be limited during the turn-off time of the primary-side switch.

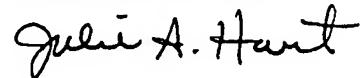
Rather, Hosoya discloses a switching regulated power supply apparatus. Similar to the circuit of Nishida, Hosoya does not include a diode arranged such that the charging current of a control capacitor is limited during the turn-off time of the primary-side switch.

For at least the reasons discussed above, Hosoya does not disclose the subject matter of Claim 1. Accordingly, independent Claim 1 is allowable. Claims 4-17 depend from Claim 1, and, are therefore, allowable for at least the reasons Claim 1 is allowable.

CONCLUSION

In view of the foregoing, allowance of Claims 1 and 4-17 is respectfully requested. The undersigned is available for telephone consultation during normal business hours.

Respectfully submitted,



Julie A. Haut
Reg. No. 51,789

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Michael Best & Friedrich LLP
100 East Wisconsin Avenue
Suite 3300
Milwaukee, Wisconsin 53202-4108
414.271.6560